

## ABSTRACT

According to an image signal cancel-type heterodyne reception method, I-phase and Q-phase intermediate-frequency signals can be modulated using two orthogonal signals, superimposed one on the other, amplified by one amplifier, and modulated using two modulated orthogonal signals, thereby amplifying I-phase and Q-phase signals by one amplifier. Therefore, it is possible to obtain a high image signal cancellation ratio with no difference in gain for both of the phases. According to a direct conversion orthogonal frequency division reception method, on the other hand, two-phase base-band signals can be amplified respectively by one amplifier to eliminate a difference in gain between amplifications of the two-phase base-bands, thereby realizing high non-interference between sub-carriers.